Journal of Experimental and Clinical Medicine
http://dergipark.ulakbim.gov.tr/omujecm

Case Report

J. Exp. Clin. Med., 2017; 34(3):207-209
doi: 10.5835/jecm.omu.34.03.010

Conservative treatment with tracheal montgomery® T-tube in anastomotic leak due to total pharyngolaryngeal esophagectomy

Yasemin Bilgin Buyukkarabacak[a*], Aysen Taslak Sengul[a], Selcuk Gurz[a], Ahmet Basoglu[a]

[a]*Department of Thoracic Surgery, Ondokuz Mayıs University, Samsun, Turkey*

ARTICLE INFO

Article History
Received 10/03/2015
Accepted 29/09/2015

*** Correspondence to:**
Yasemin Bilgin Buyukkarabacak
Department of Thoracic Surgery,
Ondokuz Mayıs University,
Samsun, Turkey
e-mail:yaseminbuyukkarabacak@gmail.com

Keywords:
Esophagectomy
Anastomotic leak
T-tube

ABSTRACT

Following total pharyngolaryngeal esophagectomy and gastric pull up, anastomotic leaks are the most important complications that increase the postoperative morbidity and mortality. In this study, we would like to present a patient who underwent Montgomery® (Boston Medical Products) tracheal T-tube placement due to anastomotic leak after gastric pull-up and laryngectomy performed for a cervical esophageal tumor.

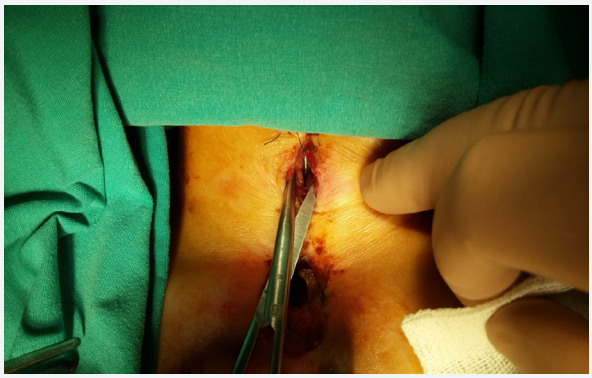
1. Introduction

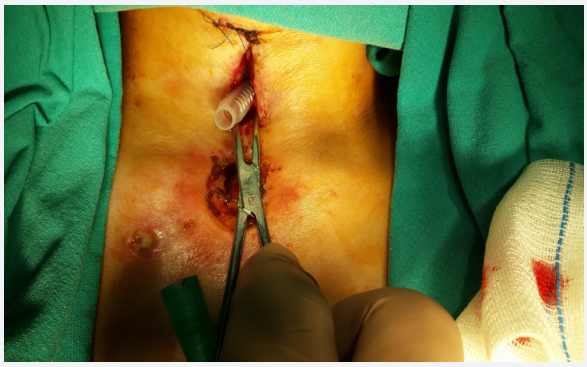
Cervical esophageal cancers are highly aggressive tumors. They often exhibit multifocal mucosal and submucosal lymphatic invasion. Total pharyngolaryngeal esophagectomy and gastric pull up are the most common treatment options (Erişken, 2003). In this study, we would like to introduce you a patient who underwent gastric pull-up and laryngectomy because of a cervical esophageal tumor.

Case

Three months ago, a 45-year-old female patient presented with the complaints of dysphagia and pain while eating solid food. Computerized thorax tomography (CTT) revealed a concentric esophageal wall thickening, starting from the thoracic entrance at about 3 cm distal to the epiglottis and continuing down for about 25 mm. It was about 12 mm at the thickest point. In the neck and thorax magnetic resonance imaging (MRI), it was detected that there was a tumoral mass at the esophageal upper end, continuing for about 4 cm, having irregular margins and close neighboring to the back wall of the trachea. Pharyngoesophageal graphy revealed a tumoral lesion in the cervical esophagus. It was about 5-6 cm inferior to the priformis and was causing a concentric stenosis in a 3-mm area at lumen. In PET CT, 18 fluorodeoxyglucose (FDG) uptake SUV-max value of the lesion was 21.6. Endoscopy revealed a concentric stenosis in the lumen and an irregularity and color change in the mucosa at the 15th cm of the esophagus. The biopsy samples taken from these lesions were reported to be epidermoid carcinoma. A tumoral mass originating from cervical esophagus, invading the postcricoid region and the posterior wall of the trachea and continuing down to the 4th tracheal ring was observed in the exploration. Total laryngectomy, including the 6th tracheal ring, was performed. Cervical esophagus was freed by dissecting the posterior part. The stomach was freed and tubelized. Esophagus was freed with blunt dissection by using transhiatal method. Esophagectomy and gastric pull-up were performed. Anastomosis was performed by hand at the cervical area. An anastomotic leak developed on the postoperative 11th day. Oral feeding was ceased. A new cervical exploration was performed. In the exploration, it was observed that the front wall of the anastomosis line was open, and the stomach wall was necrotic (Fig.1). After the debridement of the tissues, a 10-mm silicon Montgomery® tracheal T-tube was placed at the anastomosis line through the fistula tract (Fig. 2a-b). Nutrition was started on the postoperative 3rd day. No additional problems were encountered during the follow-up. T-tube was removed after the 4-week follow-up.

It was observed that the regeneration tissue created a new lumen along the T-tube, and that the defect on the anastomosis line healed completely except the defective area caused by the T-tube at the anterior (Fig.3). The defect was closed primarily with 3-0 vicryl by using skin support. Postoperatively, water and liquid food were started gradually. On the 7th day of the tube withdrawal, the patient was discharged although her dysphagia score was +1 when receiving soft foods. Along 6 month follow-up period, neither complication nor stenosis was observed.





2. Discussion

Cervical esophageal tumors are the ones that have the worst prognosis of all the head and neck tumors. These tumors characteristically have high multifocal mucosal involvement and exhibit submucosal lymphatic invasion, and they often display no symptoms until the advanced stage (Chu and Chang, 2009). So, in the treatment of these tumors, reconstruction with total pharyngolaryngeal esophagectomy and gastric pull-up can be performed in addition to hypopharynx (Sreehariprasad, 2012).

Pulmonary complications and anastomotic leaks are the most serious complications after total pharyngolaryngectomies (TPL), and they are the most important factors increasing the postoperative morbidity and mortality. Accordingly, hospital costs and length of hospital stay are affected significantly (Yenigün, 2013). In the literature, the rate of anastomotic leak has been reported to be between 9-14% after TFL (Orringer, 2007; Lindenmann, 2008). Shuangba et al. (Shuangba, 2011) reported that in the study they evaluated 208 patients with cervical and hypopharyngeal tumors, 9.1% of the patients had anastomotic leak. Of these patients, 15 healed spontaneously, and 4 underwent reconstruction with the use of pectoralis major muscle.

The frequency of anastomotic leak after esophagectomy varies depending on the organ used for anastomosis, localization of the anastomosis and the nutritional status of the patient. If the anastomosis is not too stretched, blood supply is good, the quality of the tissue is adequate and the surgeon is experienced enough, the risk of leak will be minimized (Yenigün, 2013). Levy et al. (Levy, 2010) reported in their study that the patients who underwent Mckeown esophagectomy had higher anastomotic leak rate than the patients who underwent İvor-Lewis esophagectomy. The likely cause is considered to be the poorer blood supply to the anastomosis in the cervical area on which the Mckeown esophagectomy is performed.

In cervical anastomotic leak; erythema at the incision site, high temperature and leukocytosis related to the crepitation are observed (Iannetoni, 1995). In our patient, the first symptom was erythema around the wound site.There was also food outcome through the tracheostomy stoma after food ingestion. Cervical esophagogastric anastomotic leaks are usually small. Drainage is often enough for treatment. Cases requiring anastomotic revision occur rarely. Gastric necrosis, esophagocutaneous fistula and vertebral osteomyelitis, epidural abscess resulting in paraplegia, pulmonary microabs-

cesses related to the internal jugular vein abscess and fistula of the tracheaesophagogastric anastomosis are some of these cases (Iannetoni, 1995). There was also food outcome through the tracheostomy stoma after food ingestion.
stoma after food ingestion. Cervical esophagogastric anastomotic leaks are usually small. Drainage is often enough for treatment. Cases requiring anastomotic revision occur rarely. Gastric necrosis, esophagocutaneous fistula and vertebral osteomyelitis, epidural abscess resulting in paraplegia, pulmonary microabscesses related to the internal jugular vein abscess and fistula of the tracheaesophagogastric anastomosis are some of these cases (Iannetoni, 1995). In our patient, a separation due to gastric necrosis was observed on the front wall of the anastomosis.

In the literature, T-tube placement has usually been reported in the series of patients treated for esophageal perforation (Linden, 2007; Yenigün 2013). No study reporting a tracheal T-tube placement due to anastomosis leak after TPL has been encountered in the literature.T-tube placement can be suggested particularly in patients whose diagnoses have been made after the first 24 hours, and/or when the surgical repair is not possible. The aim of T-tube placement is to create a controlled esophagocutaneous fistula. It has been reported that the morbidity and mortality rates were lower in patients who were admitted with delayed esophageal perforation and underwent T-tube placement, although their hospital stays were longer (Linden, 2007; McMahon, 2009). T-tube is withdrawn in about 4-6 weeks after the placement. During this period, while the drainage of the content is performed, the regeneration of the esophagus around the T-tube occurs through epithelialisation (Linden, 2007; Fonseca, 2009). Enteral nutrition could safely be continued in this period. Our patient started to receive food orally on the 3rd day following T-tube placement. When the T-tube was removed in the 5th week, it observed that the front wall of the esophagus had regenerated on top of the T-tube and formed a new front wall. Thanks to the design of t tube, it was prevented migration of tube and development of a new esophageal stricture.

The mortality rate after TPLs has been reported to be 15%. The most significant factors reducing this rate are the advances in the surgical techniques, advanced intensive care follow-up and the efficient nutritional support (Homma, 2014).
The reoperation rate has been reported to be 30% in patients treated with T-tube placement, and the mortality rate in these patients is 9% (Linden, 2007). In our patient, we managed to start a high-calorie and protein-rich oral enteral nutrition just on the 2nd day following the T-tube placement. Thus, new mucosal healing around the T-tube was achieved in the 4th week, and feeding continued without any additional problem after the removal of T-tube. Total pharyngolaryngeal esophagectomy and gastric pull-up resections are safe and effective treatment methods for the local control in cervical esophageal tumors. When other treatment alternatives are not effective enough in patients that developed postoperative anastomotic leak, T-tube placement can be considered as a suitable conservative treatment option.

REFERENCES

Chu, PY., Chang, SY. Reconstruction of the hypopharynx after surgical treatment of squamous cell carcinoma. J Chin Med Assoc 2009;72:351-355. doi: 10.1016/S1726- 4901(09)70386-7

Erişken, L., Coşun, H., Korun, N., Gebitekin, C,, Basut O . Total farengolarengoözofajektomi ve gastrik pull-up greftleme uygulanan 10 olgunun değerlendirilmesi. Kulak Burun Bogaz Ihtis Derg 2003;11:108-112

Fonseca AZ, Ribeiro Jr MAF, Frazâo M, Costas MC, Spinelli L, Contrucci O. Esophagectomy for a traumatic esophage¬al perforation with delayed diagnosis. World J Gastrointest Surg. 2009;1: 65-67. doi: 10.4240/wjgs.v1.i1.65.

Homma, A., Nakamaru, Y., Hatakeyama, H., Mizumachi, T., Kano, S., Furusawa, J., Sakashita, T., Shichinohe, T., Ebihara, Y., Hirano, S., Furukawa, H., Hayashi, T., Yamamoto, Y., Fukuda, S. Early and long-term morbidity after minimally invasive total laryngo-pharyngo-e sophagectomy with gastric pull-up reconstruction via thoracoscopy, laparoscopy and cervical incision. Eur Arch Otorhinolaryngol.2014 Dec 5. 272:3551-3556.

Iannetoni, MD., Whyte, RI., Orringer MB. Catastrophic complications of the cervical esophagogastric anastomosis. J Thorac Cardiovasc Surg 1995;110:1493-1500.

Levy, RM., Wizorek, J., Shende, M., Luketich, JD. Laparoscopic and thoracoscopic esophagectomy. Adv Surg 2010; 44: 101–116

Linden, PA., Bueno, R., Mentzer, SJ., Zellos, L., Lebenthal, A., Colson, YL., Sugarbaker, DJ., Jaklitsch MT. Modified T-tube repair of dela yed esophageal perforation results in a low mortality rate similar to that seen with acute perforations. Ann Thorac Surg 2007;83:129-133.

Lindenmann, J., Matzi, V., Porubsky, C., Anegg, U., Sankin, O., Gabor, S., Neuboeck, N., Maier, A., Smolle-Juettner, FM. Self-expandable covered metal tracheal type stent for sealing cervical anastomotic leak after esophagectomy and gastric pull-up: pitfalls and possibili ties. AnnThorac Surg 2008;85:354-356.

McMahon, MA., O'Kelly, F., Lim, KT., Ravi, N., Reynolds, JV.Endoscopic T-tube placement in the management of lye-induced esophageal perforation: Case report of a safe treatment strategy. Patient Saf Surg. 2009;14;3:19. doi: 10.1186/1754-9493-3-19.

Orringer, MB., Marshall, B., Chang, AC., Pickens, A., Lau, CL. Two thousand transhiatal esophagectomies: Changing trends, lessons lear ned. Ann Surg 2007;246:363-374.

Shuangba, H., Jingwu, S., Yinfeng, W., Yanming, H., Qiuping, L., Xianguang, L., Weiqing, X., Shengjun, W., Zhenkun, Y. Complication following gastric pull-up reconstruction for advanced hypopharyngeal or cervical esophageal carcinoma: a 20-year review in a Chinese institute. Am J Otolaryngol. 2011;32:275-8. doi: 10.1016/j.amjoto.

Sreehariprasad, AV., Krishnappa, R., Chikaraddi, BS., Veerendrakumar, K. Gastric pull up reconstruction after pharyngo laryngo esophagec tomy for advanced hypopharyngeal cancer. Indian J Surg Oncol. 2012;3:4-7. doi: 10.1007/s13193-012-0135-5.

Yenigün, MB. Özofagus rezeksiyonlarında cerrahi komplikasyonlar www.toraks.org.tr/Download.aspx?book=1481 doi:10.5152/tcb.2013.22